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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
STEELMAN, MARY J	

ART UNIT	PAPER NUMBER
2191	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/733,674	TSUBOI, AKIRA	
	Examiner	Art Unit	
	Mary J. Steelman	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,6,9,11,13,15 and 17-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,6,9,11,13,15 and 17-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to RCE and Amendment filed 7 January 2005. Per Applicant's request new claims 18-29 have been added. Previously claims 1-4, 7, 8, 10, 12, 14, and 16 were canceled. Currently claims 5, 6, 9, 11, 13, 15, and 17-29 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 5, 6, 9, 11, 13, 15, and 17-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,349,344 B1 to Sauntry et al., in view of US Patent 5,978,585 to Crelier.

Per claims 5 and 9, Sauntry disclosed:

An apparatus having an execution unit for executing a machine language, compiling a source program into a machine language directly executable by the execution unit, and executing the machine language in a just-in-time-compiler system, comprising: (Col. 3, lines 47-48, "The present invention describes devices, computers, computer-readable media, and systems of varying scope" (apparatus) and col. 10, lines 24-29, "whole the class files are being parsed during creation of the preload DLL file, JAVA byte code may also be compiled into native code,

and this native code also stored in the DLL file. (compile source program into a machine language) This is comparable to the just-in-time (JIT) interpretation conducted on a typical JAVA virtual machine...")

a storage unit storing for each function a machine language executable by the execution unit obtained by compiling a function described in the source program, and maintaining stored data after the source program has been executed; (Col. 8, lines 33-35, "The file is desirably burned into ROM (or other nonvolatile storage device) (maintain stored data after execution) to create a run-time image of the JAVA class files ..." and col. 7, lines 56-59, "The converter is desirably a software tool...that provides for the combination of class files into a single DLL file, where the DLL file is in portable executable (PE) format (store converted source into DLL in machine language)."

compiling unit compiling the source program into a machine language executable by the execution unit; (Col. 10, lines 24-27, "while the class files are being parsed during creation of the preload DLL file, JAVA byte code may also be compiled into native code (compile source code into machine language), and this native code also stored in the DLL file...time is not wasted later ...at run-time (execution).")

an execution control unit instructing the execution unit to directly execute either a machine language compiled by said compiling unit or a machine language stored in said storage unit depending on a determination result obtained by said determination unit. (Col. 8 , lines 52-61.)

Sauntry disclosed a storage control unit storing the machine language compiled by said compiling unit, but failed to disclose details regarding updating and the use of date and time. However, Crelier disclosed:

-corresponding to update date and time of the source program compiled by said compiling unit"; (Abstract, lines 8-9, "Examination of the timestamps leads to detection of those files which have been modified. The system will recompile..." Also, col. 3, lines 26-34, "...system keeps track of several pieces of information...timestamps of sources and compiled files...Examination of the timestamps leads to detection of those files which have been modified...")

-a determination unit determining whether or not the update date and time of the source program matches an update date and time corresponding to the machine language stored in said storage unit; (Abstract, lines 10-13, "The system will recompile A.java in the following circumstances: (1) A.class is not found, (2) A.java has a different timestamp, or (3) A.class has a different timestamp." Also see FIGS. 4A-C and col. 10, lines 10-38, "...at step 402, the source file's timestamp is examined to determine whether it has changed...")

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to have modified Sauntry's invention, to include information regarding timestamps and program modification requiring recompilation, as this is a useful technique for maintaining logic regarding updates and to track versioning as software evolves. Timestamps are well known in the art for detecting versions and updates. Sauntry's invention relates (col. 1, lines 16-20) to "facilitating development of software programs, with particular emphasis on decreasing the time

such a system spends on recompiling source modules..." and thus would be an obvious combination of arts.

Per claim 6, Sauntry disclosed:

a read unit reading a program file storing the source program, wherein (Col. 7, line 36, "...the converter uses the JAVA class files as input... (read program file)")

said storage control unit stores the machine language in said storage unit (Col. 7, lines 38-39, "...ROM imager (storage control unit) as input to burn on a ROM (said storage unit)."

Sauntry disclosed a storage control unit stores the machine language in said storage unit, but failed to disclose details regarding updating and the use of date and time. However, Crelier disclosed:

by assuming that the update date and time of the program file indicated in the program file is the update date and time of the source program corresponding to the machine language; (Col. 3, lines 38-39, "If a recompilation is not required..." (assume that compiled language has not changed from source language through the use of timestamps.)

said determination unit determines whether or not the update date and time of the program file indicated in the program file matches the update date and time stored in said storage unit corresponding the machine language. (Col. 3, lines 33-34, "Examination of the timestamps leads to detection of those files which have been modified. The system will recompile..." If the timestamps do not match, the source files have been modified, therefore requiring recompilation.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to have modified Sauntry's invention, to include information regarding timestamps and program modification requiring recompilation, as this is a useful technique for maintaining logic regarding updates and to track versioning as software evolves. Timestamps are well known in the art for detecting versions and updates. Sauntry's invention relates (col. 1, lines 16-20) to "facilitating development of software programs, with particular emphasis on decreasing the time such a system spends on recompiling source modules..." and thus would be an obvious combination of arts.

Per claims 11, 13, 15, and 17, Sauntry disclosed:

A method for executing a program based on a just-in-time-compiler system for compiling a source program into a machine language directly executable on a platform of a specific processing system, and executing the machine language, comprising: (Col. 8, lines 47-52, "At run-time (executing), the JAVA virtual machine does a LoadLibrary call and a GetProcAddress call..." and col. 9, lines 23-26, "This method is inclusive of the steps or acts required to be taken by a device such as a computer to preload and preparse at least one JAVA class file into a run-time image (machine language) stored on a nonvolatile storage device such as a ROM." Also col. 10, lines 26-27, "This is comparable to the just-in-time (JIT) interpretation ...")

storing the machine language obtained by compiling the source program for each function described in the source program; (Col. 10, lines 23-26, "...while the class files are being parsed during creation of the preload DLL file, JAVA byte code may also be compiled into native code, and this native code also stored in the DLL file.")

Sauntry disclosed a storage control unit stores the machine language in said storage unit, but failed to disclose details regarding updating and the use of date and time. However, Crelier disclosed:

storing compiled code corresponding to an update date and time of the source program before compiled into a machine language; (Col. 3, lines 29-31, "the system keeps track of several pieces of information. From the outset, the system has kept track of the timestamps of sources...and compiled files thereof...")

determining whether or not the date and time of the update of the source program matches an update date and time corresponding to the stored machine language; (Col. 3, lines 33-34, "Examination of the timestamps leads to detection of those files which have been modified.")

setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly executed on a platform of a specific processing system based on a determination result. (Col. 3, lines 34-47, "The system will recompile...in the following circumstances...Otherwise, the system does not invoke a recompile...")

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to have modified Sauntry's invention, to include information regarding timestamps and program modification requiring recompilation, as this is a useful technique for maintaining logic regarding updates and to track versioning as software evolves. Timestamps are well known in the art for detecting versions and updates. Sauntry's invention relates (col. 1,

lines 16-20) to "facilitating development of software programs, with particular emphasis on decreasing the time such a system spends on recompiling source modules..." and thus would be an obvious combination of arts.

Per claims 18-23:

-the stored machine language is stored in RAM.

Sauntry disclosed (col. 7, lines 19-20), "the converter loads and parses the Java class files into a file, which is then desirably burned into ROM..."(col. 8, lines 33-35), "The file is desirably burned into ROM (or other nonvolatile storage device) (maintain stored data after execution) to create a run-time image of the JAVA class files ..." It is inherent that the file is stored in RAM prior to burning into ROM. It is well known that a file may be brought into RAM at the time the stored code is to be executed to increase execution speed.

Per claims 24-29:

-storage unit also has stored thereon a standard source program compiled from an original source program.

Sauntry disclosed, (col. 3, lines 5-6), "the run-time image is a DLL file (standard source program, compiled from original source program) stored in read-only memory (ROM)...", col. 7, lines 55-65, "The converter is desirably a software tool...that provides for the combination of class files into a single DLL file, where the DLL file is in portable executable (PE) (standard source program, compiled from original source program) format known in the art..."

Response to Arguments

4. Applicant's arguments filed 7 February 2005 have been fully considered but they are not persuasive.

Applicant has argued, in substance, the following:

(A) As Applicant has noted on page 10, 3rd paragraph of Amendment, one "would not have been motivated to modify the Sauntry et al. device in light of the Crelier reference."

Examiner's Response:

Both references seek optimal progam development, a reduction in compilations. Examiner agrees that Sauntry's goal is to decrease time for execution and decrease the amount of storage space. It should also be noted (col. 6, lines 48-67) that the structure of Java class files contains version and other identifying information. It is reasonable that this information can be used as a type of 'timestamp' to identify modified files. Crelier teaches selectively recompiling (col. 2, lies 61-63) modules, thereby reducing the number of recompiles (a decrease in time) by tracking modified files using timestamps. Crelier: col. 3, lines 26-28, "The development system of the present invention includes methodology for improving system performance by decreasing recompilation of dependent source modules." The Crelier invention is meant to improve system performance. Examiner disagrees with Applicant's argument. Applicant's comments regarding the use of RAM in Crelier's invention are unfounded, as Crelier does not comment on RAM.

Examiner maintains the rejections of claims 5-6, 9, 11, 13, 15, and 17-29.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Note: US Patent 6,078,744 to Wolczko et al., 1997

Wolczko (col. 2, lines 43-51) disclosed improving performance of a compiler by journaling compilation data. The journaled information is then used during subsequent compilations instead of recomputing... Col. 7, lines 18-22, "The record also distinguishes when the compilation unit has changed between the initial and subsequent compilations. One skilled in the art will understand that many techniques (such as timestamps) exist for determining equivalence of the compilation unit." Thus it should be noted that all references depict the state of the art in 1997, whereby storing precompiled code and comparing equivalence to a possibly later code segment, was known in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached at (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman

03/15/2005

TUAN DAM
SUPERVISORY PATENT EXAMINER